

Amendment to the Claims:

This listing of claims will replace all versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for imaging an associated object, comprising the steps of:

directing one part of a low coherence optical radiation towards an associated object through an optical system, which ensures focusing the low coherence optical radiation onto the object;

scanning the low coherence optical radiation being directed towards ~~[[the]]an~~ associated object over a transverse scanning surface, that is approximately orthogonal to the direction of propagation of said optical radiation;~~in compliance with a predetermined rule;~~

providing a constant propagation time for the low coherence optical radiation propagating from a given point of the transverse scanning surface to a corresponding conjugate point of ~~[[the]]an~~ image plane, thereby eliminating ~~[[the]]a~~ transverse scanning related aberration of ~~[[the]]an~~ optical path length for the low coherence optical radiation directed towards ~~[[the]]an~~ associated object;

directing another part of the low coherence optical radiation along a reference optical path, and

combining ~~[[the]]an~~ optical radiation having returned from ~~[[the]]an~~ associated object with ~~[[the]]an~~ optical radiation that passed through the reference optical path;

visualizing ~~[[the]]an~~ intensity of the optical radiation having returned from ~~[[the]]an~~ associated object using for that ~~[[the]]an~~ optical radiation that is a result of the combining.

2. (Currently Amended) A method as claimed in claim 1, further comprising the step of longitudinal scanning by varying ~~[[the]]a~~ difference between the optical path lengths for the low coherence optical radiation directed towards the object and low coherence optical radiation directed along the reference optical path, said longitudinal scanning being performed for given coordinates in the transverse scanning surface in compliance with a predetermined rule.

3. (Original) A method as claimed in claim 2, wherein the difference between the optical path lengths for the low coherence optical radiation directed towards the object and low coherence optical radiation directed along the reference path is varied by at least several tens of wavelengths of the low coherence optical radiation.

4. (Original) A method as claimed in claim 2, wherein the difference between the optical path lengths is varied by altering the optical path length for the low coherence radiation propagating from the transverse scanning surface to the optical system.

5. (Currently Amended) A method as claimed in claim 1, wherein the object ~~[[s]]~~ is a biological tissue of a living body.

6. (Original) A method as claimed in claim 5, wherein the object is an internal cavity of a living body.

7. (Original) A method as claimed in claim 1, wherein the low coherence optical radiation is an optical radiation in the visible or near infrared range.

Claims 8-35 (Cancelled)